NEUROSCIENCE AND BEHAVIORAL PHYSIOLOGY
Volume 28, Numbers 1-6, 1998

Engl./Russ.

Volume 28, Number 1, January-February, 1998

Neuroendocrine Control of the Gonadotropic Function of the Hypophysis in Experimental Diabetes - V. N. Babichev, E. I. Adamskaya, T. A. Kuznetsova, and I. V. Shishkina 1
Functional Rearrangements in the Human Brain During Emotional Self-Regulation with Biological Feedback - E. I. Popova, V. F. Mikheev, V. T. Shuvaev, A. A. Ivonin, and G. M. Chernyakov 8
Structural Basis for the Functional Specialization of the Pallidal Complex of the Cat Brain - A. I. Gorbachevskaya and O. G. Chivileva 17
Effects of Controllable and Uncontrollable Stresses on the Receptor Binding of Dexamethasone in the Hypophysis and Hippocampus of Rats with Different Behavior Strategies - N. É. Ordyan and D. A. Zhukov 22
Effect of Low-Intensity Millimeter-Range Electromagnetic Irradiation on the Recovery of Function in Lesioned Sciatic Nerves in Rats - L. I. Kolosova, G. N. Akoev, O. V. Ryabchikova, and V. D. Avelev 26
Conditioned Reflex Responses of the Sympathetico-Adrenal System to an Aversive Taste Stimulus - V. G. Kassil', M. Yu. Bondarenko, and V. A. Mikhailenko 31
Brain Catecholamines and the Hypothalamo-Hypophyseal-Adrenocortical System in Inherited Arterial Hypertension - L. N. Maslova, G. T. Shishkina, V. V. Bulygina, A. L. Markel', and E. V. Naumenko 38
Organization of Afferent and Efferent Projections in the Hypothalamic Subiculum-Supraoptic Region System in the Rat Hypothalamus - E. A. Lutsik 45
Neuron Discharges in the Rat Auditory Cortex During Electrical Intracortical Stimulation - P. E. Maldonado, J. A. Altman, and G. L. Gerstein 48
γ-Aminobutyric Acid Levels in the Intercellular Space in the Nucleus Accumbens of the Rat Brain During a Nociceptive Conditioned Response - N. B. Saul'skaya and Ch. A. Marsden 60
Inactivation Kinetics of Sensory Neuron Sodium Channels Depend on the Type of Hydrogen Ion Buffer - B. V. Krylov, S. A. Podzorova, and Yu. Yu. Vilin 65
Electrophysiological Analysis of the Morphofunctional Organization of the Limbic Control of Magnocellular Neurosecretory Nuclei in the Rat Hypothalamus - N. P. Prutskova 72
Functional Mapping of the Motor Cortex of the White Mouse by a Microstimulation Method - I. V. Pronichev and D. N. Lenkov 80
Simple Apparatus for the Electrical Cleaning of Glass Microelectrodes - D. Yu. Bud'ko, L. L. Moroz, and V. N. Gurin 86
Distribution of Nitric Oxide Synthetase in Rat Cerebral Cortex Cells - D. É. Korzhevskii and V. A. Otellin 90
Neurochemical Characteristics of Neurons of the Human Hippocampal Formation - I. V. Dyuizen, V. E. Okhotin, S. G. Kalinichenko, and P. A. Motavkin 94

Volume 28, Number 2, March-April, 1998

Role of G-Proteins and Second Messenger Systems in the Plasticity of a Defensive Reflex in the Common Snail - L. N. Grinkevich, L. B. Toporkova, P. D. Lisachev, and N. I. Izvarina 101

Responses of Cortical Neurons to Microiontophoretic Application of Acetylcholine to Their Dendrites - Yu. S. Mednikova, E. V. Loseva, S. V. Karnup, and M. N. Zhadin 107
Nootropic Agent Vinpocetine Blocks Delayed Rectified Potassium Currents More Strongly than High-Threshold Calcium Currents - Yu. V. Bukanova and E. I. Solntseva 116
Studies of Long-Term Potentiation and Depression of Inhibitory Transmission by Mathematical Modeling of Post-Synaptic Processes - G. B. Murzina and I. G. Sil'kis 121
Comparison of the Effects of Dopamine Agonists on Self-Stimulation of the Hypothalamus with Lesioning of Mesolimbic Brain Structures in Rats Reared in Conditions of Social Isolation- G. N. Panchenko, A. A. Lebedev, and P. D. Shabanov 130
Duration of the Persistence of Movement Activity in Rats Induced by Single Injections of Haloperidol - A. S. Bazyan, V. N. Getsova, and N. V. Orlova 136
Neuronal Network Simulating the Simultaneous Contrast of Equiluminant Colors - E. N. Sokolov 140
Mechanism of Organization of Different Types of Directed Movements - A. I. Skorinkin 149
Effects of a Number of Short Peptides Isolated from the Brain of the Hibernating Ground Squirrel on the EEG and Behavior in Rats - D. A. Ignat'ev, V. V. Vorob'ev, and R. Kh. Ziganshin 158
Effect of Stimulation of the Lateral Hypothalamus on the Correlation of Neuron Spike Activity in the Rabbit Neocortex - I. V. Pavlova, I. V. Volkov, and V. N. Mats 167
Contrasting of Synaptic Signals by Simultaneous Modification of Excitatory and Inhibitory Inputs - G. B. Murzina and I. G. Sil'kis 174
Long-Term Posttetanic Changes in the Background Activity of Neurons in Both Hemispheres - O. G. Bogdanova 183
Functional Importance of α-Activity in the Visual Cortex During Recognition of Images and Movement - I. A. Shevelev 186
Assessment of Contrast Sensitivity in Kittens After the Critical Developmental Period - S. V. Alekseenko and N. V. Prazdnikova 198
Effect of Electrical Stimulation of the Mamillary Nuclei of the Hypothalamus on Skin Vessel Permeability in Intact and Capsaicin-Treated Rats - Z. S. Tolochko and G. B. Knyazeva 201
Agonistic Behavior During Stress Prevents the Development of Learned Helplessness in Rats - D. A. Zhukov and E. P. Vinogradova 206
Asymmetry of the Internal Connections of the Striate Cortex of the Cat in the Projection Zone of the Center of the Field of Vision - S. V. Alekseenko, S. N. Toporova, V. E. Gauzel'man, and F. N. Makarov 211

Volume 28, Number 3, May-June, 1998

Basal Ganglia: Structure and Function - N. F. Suvorov 219
Involvement of Striatum (Putamen) Neurons in Motor and Nonmotor Behavior Fragments in Monkeys - B. F. Tolkunov, A. A. Orlov, S. V. Afanas'ev, and E. V. Selezneva 224
Collective Responses of Neostriatal (Putamen) Neurons during Alternative Behavior in Monkeys - S. V. Afanas'ev, B. F. Tolkunov, A. A. Orlov, and E. V. Selezneva 231
Activity of Substantia Nigra Neurons in the Cat Brain during a Self-Initiated Behavioral Act - V. G. Sidyakin, V. B. Pavlenko, A. M. Kulichenko, É. V. Gorelova, and O. M. Pavlenko 238
Increasing the Activity of the Neostriatum Cholinergic System Alters an Established Type of Motor Behavior in Animals - K. B. Shapovalova 244

Large Neostriatal Neurons in Humans and Their Possible Role in Neuronal Networks - T. A. Leontovich 252
Spatial Organization of Amygdaloid, Nigral, and Tegmental Projections in the Dog Neostriatum - A. I. Gorbachevskaya 260
Assessment of the High-Frequency Components of Brain Electrical Activity using Inhomogeneity Indexes - M. K. Kozlov and V. N. Dumenko 268
Effect of Sodium Nitrite on the Execution of Defensive and Inhibitory Conditioned Reflexes - G. I. Shul'gina 278
Brightness Perceptive Space in Monkeys (Rhesus Macaques) - D. V. Evtikhin, A. V. Latanov, and E. N. Sokolov 285
Contribution of Presynaptic Dopaminergic Receptors to the Mechanism of the Reactivating Effects of Blockade of the GABA-Benzodiazepine-Ionophore Complex - N. I. Dubrovina and R. Yu. Il'yuchenok 294
Modification of the Behavioral Effects of Corticoliberin by Early Post-Natal Administration of Corticosteroid Hormones - V. G. Shalyapina, E. V. Turkina, E. A. Rybnikova, V. V. Rakitskaya, and S. G. Pivina 299
Ultrastructure of Synapses in the Upper Layers of the Cat Cerebral Cortex after Application of Strychnine - I. I. Kutateladze and I. L. Lazriev 304
Structure of Higher Sections of the Motor System of the Rat Brain after Various Forms of Hypokinesia - M. G. Zhvaniya and N. A. Kostenko 312
Morphofunctional Organization of an Accessory Olfactory Organ in Mammals - P. I. Lobko, N. N. Tyatenkova, and O. B. Bashlak 319
Structure of Nocturnal Sleep in Patients with Cerebral Insult - R. L. Gasanov, T. R. Gitlevich, V. N. Lesnyak, and Ya. I. Levin 325
"Brain Music" in the Treatment of Patients with Insomnia - Ya. I. Levin 330
State of the Sympathetico-Adrenal System in Patients with Hypothalamic Pubertal Syndrome - N. P. Goncharov, N. I. Verbovaya, and T. P. Krivchenko 336

Volume 28, Number 4, July-August, 1998

Changes in Neurotransmitters in Multiple Sclerosis - V. P. Barkhatova, I. A. Zavalishin, L. Sh. Askarova, V. Kh. Shavratskii, and E. G. Demina 341
Age-Related Changes in the Cytoarchitectonics of the Human Sensorimotor Cortex - N. S. Shumeiko 345
Differentiation of Neurons in the Locus Ceruleus after Allotransplantation into Previously Denervated White Rat Hippocampus - I. K. Svanidze, Ts. S. Tsaishvili, Z. G. Kokaya, S. B. Godziashvili, and M. G. Kokaya 349
Age-Related Changes in Oxytocinergic Neurosecretory Cells in the Accessory Magnocellular Neuroendocrine Nuclei of the Hypothalamus in Rats - E. D. Bazhanova, V. V. Grinevich, O. A. Danilova, and E. V. Chernigovskaya 354
Ribonuclease Improves the State of Hippocampal Sections in the Post-Ischemic Period - I. E. Kudryashov, I. V. Kudryashova, and V. V. Raevskii 357
Adaptive Regulation of the Nonlinear Dynamics of Electrical Activity of the Brain - A. Ya. Mogilevskii, L. P. Derzhiruk, A. P. Panchekha, and E. A. Derzhiruk 366
Role of Enkephalinergic Brain Structures in Regulating Motivated Behavior in Rats with Lesioned Serotoninergic Neurons - N. P. Shugalev 376
Conditioned Reflex Release of Dopamine in the Nucleus Accumbens after Disruption of the Hippocampal Formation in Rats - N. B. Saul'skaya and A. I. Gorbachevskaya 380
Role of the Cholinergic Systems of the Dorsal and Ventral Striatum of the Rat Brain in Controlling Learned Movements - N. M. Dubrovskaya and I. A. Zhuravin 386
Adenylate Cyclase System of the Rat Striatum: Regulatory Properties and the Effects of Gangliosides - S. A. Plesneva, N. N. Nalivaeva, and I. A. Zhuravin 392

Morphofunctional Studies of the Interactions of the Glutamatergic, Cholinergic, and Dopaminergic Systems in the Neostriatum - N. N. Oleshko 397
Possible Mechanisms of Delay in Initiation of Voluntary Movements - I. N. Krylov 402
Effects of Electrical Stimulation of the Caudate Nucleus on Functionally Identified Neurons of the Sensorimotor Cortex in the Cat Brain - V. G. Sidyakin, A. M. Stashkov, E. V. Mel'nichenko, and I. I. Korenyuk 409
Activation of the Cholinergic System of the Striatum Improves the Differentiation of Sound Signals by Dogs - K. B. Shapovalova, S. P. Romanov, and T. A. Dyubkacheva 414
Effects of Lesions to the Parafascicular Nuclei of the Thalamus on the Development of a Conditioned Active Escape Reflex in Rats - T. A. Dyubkacheva 419
Effects of Lesioning of the Parafascicular Nucleus of the Thalamus on an Operant Food-Procuring Reflex in Rats - D. L. Tikhonravov 423
Spatial Organization of Afferent Inputs to the Limbic Cortex in Rats and Cats - F. N. Makarov, T. I. Varmalova, and É. É. Granstrem 426
Residual Lesions of Operant Behavior in Monkeys Following Recovery from MPTP-Induced Parkinson-Like Syndrome - A. V. Latanov, L. V. Tereshchenko, A. G. Yudin, and V. V. Shul'govskii 431
Role of Atrial Natriuretic Peptide in the Development of Arterial Hypertension in Patients with Pubertal Hypothalamic Syndrome - T. P. Krivchenko and N. I. Verbovaya 435
Desensitization of the Post-Synaptic Membrane of Neuromuscular Synapses Induced by Spontaneous Quantum Secretion of Mediator - R. A. Giniatullin and L. G. Magazanik 438
Effects of Delta-Sleep-Inducing Peptide in Cerebral Ischemia in Rats - A. A. Shandra, L. S. Godlevskii, A. I. Brusentsov, R. S. Vast'yanov, V. A. Karlyuga, A. F. Dzygal, and B. Nikel 443
Question of Time in Studies of the Neuronal Correlates of Behavior - B. F. Tolkunov 447
Role of the Functional State of the Central Nervous System in the Mechanism Forming Responses from the Peripheral and Central Parts of the Visual Analyzer - N. M. Rzaeva 451
Blood Flow Dynamics in Different Layers of the Somatosensory Region of the Cerebral Cortex on the Rat During Mechanical Stimulation of the Vibrissae - Yu. E. Moskalenko, T. A. Woolsey, C. Rovainen, G. B. Weinstein, D. Liu, V. N. Semernaya, and V. F. Mitrofanov 459
Effects of Transcranial Micropolarization of the Frontal Cortex on the State of Motor and Cognitive Functions in Extrapyramidal Pathology - A. M. Shelyakin, I. G. Preobrazhenskaya, E. V. Pisar'kova, Zh. M. Pakhomova, and O. V. Bogdanov 468

Volume 28, Number 5, September-October, 1998

Mitotic Activity and Rosette Formation in the Neuroepithelium of the Human Embryo Neocortex *in vitro* - E. B. Smirnov, I. P. Bystron', V. F. Puchkov, and V. A. Otellin 473
Spatial Organization of Cortical and Subcortical Afferent Projections of the Neostriatum in Dogs - O. G. Chivileva and A. I. Gorbachevskaya 478
Histological Identification of Lugaro Cells in the Cat Cerebellum - A. B. Melik-Musyan and V. V. Fanardzhyan 486
Immunization Against Monoamine Oxidase Slows Extinction of a Conditioned Active Escape Reflex in Rats - E. V. Buzinova, Zh. E. Slesareva, M. F. Obukhova, and I. P. Ashmarin 490

Features of the Spike Activity of Globus Pallidus Neurons and Pallido-Thalamic Functional Interactions during Targeted Verbally Cued Movements in Humans - S. N. Raeva 493
^{45}Ca Exchange in Rat Cortex Slices in Conditions of Long-Term Potentiation - N. E. Sokolova, U. M. Malikov, V. L. Kuznetsov, and N. A. Emel'yanov 500
Kindling-Like State Occurring on Periodic Increases in the Extracellular K^+ Concentration in Field CA1 in Rat Hippocampal Slices - A. V. Sem'yanov, S. V. Kalemenev, and O. V. Godukhin 504
Spontaneous Activity of Individual Neurons in the Human Ventrolateral Thalamus during Changes in the Functional State of the Brain - S. N. Raeva, N. A. Vainberg, and V. A. Dubynin 513
Delta-Sleep-Inducing Peptide and Its Analogs and the Serotoninergic System in the Development of Anticonvulsive Influences - A. A. Shandra, L. S. Godlevskii, A. I. Brusentsov, V. P. Petrashevich, R. S. Vast'yanov, B. Nikel, and I. I. Mikhaleva 521
Effects of Hippocampectomy on the Development and Recovery of a Conditioned Reflex to Time in Rats - M. G. Vodolazhskaya 527
Interneuron Relationships in the Basolateral Amygdala in Cats Treated to Select Food on the Basis of Quality - G. Kh. Merzhanova, É. E. Dolbakyan, and A. Z. Partev 533
Cross-Correlation Analysis of Neuron Connections in the Cerebellum of Conscious Rabbits - V. L. Dunin-Barkovskii, L. I. Antsiferova, and A. G. Gusev 539
Serotonin Imitates Several of the Neuronal Effects of Nociceptive Sensitization in the Common Snail - A. V. Shevelkin, V. P. Nikitin, S. A. Kozyrev, M. O. Samoilov, and V. V. Sherstnev 547
Effects of Serotonin Levels on Postsynaptically Induced Potentiation of Snail Neuron Responses - A. Yu. Malyshev, N. I. Bravarenko, A. S. Pivovarov, and P. M. Balaban 556
Effects of Doses of Fragment (25-35) of β-Amyloid Peptide on Behavior in Rats - M. Yu. Stepanichev, N. A. Lazareva, M. V. Onufriev, O. S. Mitrokhina, Yu. V. Moiseeva, and N. V. Gulyaeva 564
Effect of 2-Amino-5-phosphopentanoic Acid (AP5), a Glutamate NMDA Receptor Blocker, on Neuron Activity in the Cat Motor Cortex during Performance of a Paw Placement Conditioned Reflex - V. I. Maiorov, B. V. Chernyshev, and A. A. Moskvitin 567
Effects of Iontophoretic Administration of Acetylcholine to Rabbit Motor Cortex Neurons on the Functioning of Intracortical Connections - V. N. Khokhlova 577
Involvement of the Genetic Apparatus in Memory Formation Mechanisms: the Role of the Neuronal Calcium-Regulatory System in Rats - O. G. Kulikova, B. A. Reikhardt, and N. S. Sapronov 583
Functions of the Hypophysis-Gonad and Hypophysis-Adrenal Cortex Systems during Repeated Administration of Gonadotropin-Releasing Hormone in the Postnatal Period - N. P. Goncharov and V. Yu. Butnev 589
Magnetic and Electrical Stimulation in the Rehabilitative Treatment of Patients with Organic Lesions of the Nervous System - T. G. Tyshkevich and V. V. Nikitina 594

ABSTRACTS

Mechanisms of Calcium Homeostasis in Nerve Cells and Their Disturbance during Brain Pathology - P. G. Kostyuk 598
Selective Block of AMPA/Kainate Receptors of Hippocampal Interneurons as a New Approach to the Investigation of the Inhibitory System - L. G. Magazanik, M. V. Samoilova, S. L. Buldakova, K. V. Essin, and V. E. Gmiro 598
Forward Masking in the Evoked Responses of the Guinea Pig Auditory Cortex: Effects of Variation of the Interaural Time and Phase Differences - J. A. Altman, N. I. Nikitin, and L. B. Shestopalova 599

Involvement of the Striatum Serotonergic System in the Expression of Genetically Defined Catalepsy - N. K. Popova, A. V. Kulikov, D. F. Avgustinovich, and N. N. Barykina 599
Neuronal Reactions in the Dorsolateral Pontine Area during the Immobility Response in Rats - B. Yu. Mileikovskii and A. D. Nozdrachev 600

Volume 28, Number 6, November-December, 1998

Clinical-Neuroendocrinological Syndromes Due to Lesions of the Cingulate Gyrus in Humans - S. B. Buklina 601
Relationships between the Epiphysis and Hippocampus during Formation of a Stress Response - É. B. Arushanyan and É. V. Beier 608
Effects of Limiting Afferent Flow in Early Postnatal Ontogenesis on the Development of Defensive Reflexes in Adult Rats - I. V. Kudryashova 613
Induction of the *c-fos* Gene in the Chick Brain during Visual Imprinting - A. B. Abramova and K. V. Anokhin 616
Spatial Organization of Electrical Processes in the Brain: Problems and Solutions - N. E. Sviderskaya and T. A. Korol'kova 620
Bursts of High-Frequency Synchronized Electrical Activity in the Dog Neocortex during Food-Related Operant Conditioning - V. N. Dumenko and M. K. Kozlov 636
Background Gamma-Oscillations in Neuronal Networks with Interhemisphere Connections - I. G. Sil'kis and O. G. Bogdanova 645
Chaotic Components in the High-Frequency EEG of Rabbit Cortex during Formation of a Conditioned Defensive Reflex - T. M. Efremova and M. A. Kulikov 660
EEG Frequency Ranges during Perception and Mental Rotation of Two- and Three-Dimensional Objects - A. R. Nikolaev and A. P. Anokhin 670
Role of the Vagus Nerves in Neophobia and Conditioned-Reflex Taste Aversion - V. G. Kassil', L. A. Vataeva, and G. V. Makukhina 678
Action of Modulated Electromagnetic Fields on the Emotional Component of the Systems Organization of Behavioral Acts in Rats - K. V. Sudakov 686
Effects of Delta-Sleep-Inducing Peptide on NMDA-Induced Convulsive Activity in Rats - A. A. Shandra, L. S. Godlevskii, A. I. Brusentsov, and V. A. Karlyuga 694
Relationship between the Characteristics of Visual Short-Term Memory in Monkeys and the Spatial Properties of Images - K. N. Dudkin, I. V. Chueva, and I. V. Orlov 698
Restoration of Locomotion in White Rats after Multiple Lesioning of the Motor Cortex and Heterotopic Transplantation of Cortex Fragments - N. I. Vereshchak and D. N. Lenkov 706
Morphofunctional Specialization of the Main and Accessory Magnocellular Neuroendocrine Nuclei of the Hypothalamus - V. V. Grinevich and A. L. Polenov 710
Projections of the Amygdaloid Body, Ventral Tegmental Area, and Substantia Nigra to Various Segments of the Nucleus Accumbens in the Dog Brain - A. I. Gorbachevskaya 715